

## Today's Topics:

## ARRL

Portable scanner review - Uniden/Bearcat 200XLT

Date: 20 Dec 89 17:43:08 GMT

From: microsoft!clayj@uunet.uu.net (Clay Jackson)

Subject: ARRL

Message-ID: &lt;10006@microsoft.UUCP&gt;

Whoa.....now, WAIT just a minute. While I'm not a ham (yet), I DO belong to the ARRL (in anticipation of BEING a ham, real soon now); and I'm getting a bit tired of people saying "The League doesn't do what I want, so I'm gonna quit and commence bashing 'em!".

First, I don't recall ANYONE at ARRL, including Rinaldo, EVER saying that there would no longer be ANY microwave coverage in QST, or that the League was "TOTALLY DROPPING ALL" microwave coverage/support.

I think that we need to give Rinaldo and the League a break. The job of publishing a single magazine that acts as a "flagship" publication for ALL members in an organization as diverse as the ARRL is a TOUGH one (I have been involved in a similar situation in another, smaller, less diverse organization, and I KNOW whereof I speak). The decision to drop ONE column (which was, you have to admit, a column that catered entirely to a minority) in favor of more coverage of "general interest" is certainly not an indication that the minority has somehow been completely and totally disenfranchised.

I'm not saying that I agree totally with the ARRL, or that I necessarily like ALL of QST (for example, I personally would like to see more "novice" type articles, but I'm NOT going to drop my membership if Rinaldo decides to publish fewer "Novice notes" columns.

IMHO, if you don't belong, you don't have the right to complain.

Clay Jackson

Date: 20 Dec 89 14:05:50 GMT

From: att!cbnewse!parnass@ucbvax.Berkeley.EDU (Bob Parnass, AJ9S)

Subject: Portable scanner review - Uniden/Bearcat 200XLT

Message-ID: &lt;12257@cbnewse.ATT.COM&gt;

Somebody asked for recommendations for a portable scanner. My e-mail reply bounced so I will repost an earlier review of the Uniden/Bearcat 200XLT, the model I prefer:

## UNIDEN/BEARCAT 200XLT SCANNER REVIEW

by Bob Parnass, AJ9S

For a long time now, radio enthusiasts have awaited the arrival of a decent portable scanner with 800 MHz coverage. Users had grown accustomed to the good sensitivity and reliable performance found in portable models without 800 MHz, like the Uniden/Bearcat 100XL, the Azden-manufactured Regency HX1500, and GRE-manufactured Radio Shack PRO-30. Unfortunately, early 800 MHz models, like the AOR-manufactured Regency HX2000 and HX2200 were disappointing.

Now, the wait for a good 800 MHz portable is over, because the Bearcat 200XLT is here and it's a winner.

### Physical

The new Uniden/Bearcat 200XLT is manufactured in Taiwan, and looks identical to the tall, gray 100XLT.<sup>1</sup> The case is entirely plastic, and the battery and charging circuitry is contained in a slide on pack. The differences between the 200XLT and the 100XLT are in 800 MHz band coverage and number of channels (200 vs. 100).

The "real" volume and squelch knobs on top have a positive feel, and there is little play in the squelch control.

The closely spaced keys on the 200XLT keyboard are made of soft rubber, and are well labeled. Marshmallow-like keys, combined with fat fingers, require extra care when entering frequencies. The lack of a "beep" tone to confirm key depressions, and the slight amount of tactile feedback, makes it necessary to watch the display to ensure you pushed the keys far enough.

### Memory Organization

As with the 100XLT, the 200XLT's strong point is the

amount and organization of its memory. The 200 memory channels are divided into ten banks.

Memory banks and channels may be selected or locked out. The banks are "hard partitioned," just like Bearcat scanners of old. By this I mean, Bank 1 includes channels 1-20, Bank 2 channels 21-40, etc. Regency used "soft partitioned" banks in their HX1500 and TS2 models, but the peculiar Regency system prevents channels from being locked out during a bank scan. Now that Uniden bought out Regency's consumer line, the soft bank concept may die with the current Regency models.

The large channel banks do have their place, particularly when scanning 800 MHz trunked systems and cordless phones.

Banks aside, having 200 channels means no longer having to settle for 10 or 16 most favored frequencies when away from home. Now you can bring it all with you. My 200XLT banks are programmed with frequencies for different situations:

- Bank 1: 20 of the most important frequencies for local sheriff, fire, ham repeater, plant security, etc. I usually scan this bank unless I'm hunting around for something else.
- Banks 2, 3, 4: Government frequencies by agency.
- Bank 5 contains VHF-lo and VHF-hi low power and itinerant business frequencies. Bank 6 contains similarly allocated UHF frequencies. I scan these banks when I'm at a shopping mall, fair, sporting event, or anywhere else I see walkie-talkies in use.
- Bank 7: Just the frequencies I want to monitor while in the office.
- Bank 8: Police, fire, and emergency services for other communities in this part of the state. There's almost always something happening on these channels, even in the wee hours of the morning, when my county is asleep.

The remaining banks leave 40 channels just for trial-and-error searching!

The 200XLT scans at 15 channels/second, about twice as fast as Radio Shack's top of the line PRO-32 handheld. When the 200XLT is powered on it always comes up scanning with priority off.

The LCD display panel contains all the usual indicators, and can be back lit for 15 seconds with a green light when the proper button is pressed.

### Innovations

Both the 200XLT and 100XLT feature set include new surprises. The first channel of each active bank is a priority channel, making 10 priority channels in all. There are 10 levels of priority. For example, channel 1 priority takes precedence over priority channel 11, which takes precedence over priority channel 21, etc. When the priority is switched on, the 200XLT samples all the unlocked priority channels (in active banks) every 2 seconds.

I program the first channel of each bank with the most important frequency for that bank. The priority sampling does appear to "chop up" signals a little more than on older models that sample only a single priority channel. When the power is turned off, then on again, the priority key must be pressed manually.

Let's see, did I program in that new K-Mart frequency, 154.6 MHz somewhere? Just type 154.6, ENTER when positioned to a channel you don't care about, and the LCD will display "CH 29", for instance, if you already have 154.6 MHz in channel 29.

Stated a different way, if one tries to type a frequency into the 200XLT that has already been programmed in another memory channel, the display will flash the channel number in which the frequency has already been programmed. One can override by depressing ENTER again, and the frequency will be stored in the current channel.

This "query" feature is great - especially in a scanner with so much memory.

There is a single button to search all VHF NOAA weather channels, a feature now commonplace on newer UNIDEN scanners.

## Battery Pack

The 200XLT comes with a BP-200 7.2 V Sanyo battery pack which slides onto the bottom of the radio. There is a charging jack, marked 12 VDC, and a red charging LED on the back of the pack. The pack is not supposed to be opened, but the curious need only remove 2 screws. Inside, are the charging components (regulator circuit), and 6 AA size Sanyo cells wrapped in yellow heat shrunk plastic.

The BP-200 battery pack has a 600 mAH capacity, whereas the BP-205 (supplied with my 100XLT) contained batteries internally marked 550 mAH.

When you buy the 200XLT, the 16 hour wall power supply is furnished, and is marked 12 VDC 500 mA. The wall unit is not a charger - the regulator/charging circuit is actually inside the battery pack and uses the 12 VDC furnished by the wall power supply for charging the NiCds at 60 mA. Since the 200XLT draws about 60 mA while scanning (while fully squelched), the batteries will not be charging if the scanner is on while the power supply is connected. To deposit a net charge into the batteries, the radio must be turned off.

The radio can be used with the wall power supply when the batteries are dead, but unlike older crystal controlled portables, there is no easy way to power the scanner externally, while effectively charging the internal battery. Neither is there a way to fast charge the supplied NiCd pack, and the manual cautions against leaving the supplied power pack plugged in for long periods of time (I assume Uniden means with the scanner OFF).

A PS-001 mobile power cord is available for \$4 from UNIDEN, as is a spare antenna.

The owner's guide says to expect "up to 5 hours of dependable use" between charges. Now 5 hours isn't enough for many scanner buffs, but perhaps UNIDEN's idea is to stimulate demand for extra BP-200 slide-on battery packs. My 200XLT was used for about 7 to 8 hours before the battery indicator began to flash, but Dan Doyle reports he gets only 5 hours between charges. It is the audio amplifier stage that draws the most current, so

battery life is dependent upon channel activity, and the volume control setting. Using an earphone, which draws less current than a speaker, can mean longer battery life.

### Great Audio

The audio output is rated at 480 milliwatts. As with the 100XLT, the 200XLT audio sounds great! There is plenty of undistorted audio available from the front speaker, making a Radio Shack PRO-30 sound like a whisper.

### Inside Construction

The internal construction of the 200XLT is clean, but thoughts of home repair vanish as soon as one opens the 200XLT case. Tiny surface mount components abound. You won't find these parts at Radio Shack, and you wouldn't want to solder them in anyway.

The 2 main circuit boards are surrounded by an internal metal frame, and the IF and 800 MHz front end circuits are on small circuit boards, mounted vertically on the main audio/RF board. The PLL is on another small board.

### How Does It Work?

My first 200XLT had a problem. The squelch threshold was different for different bands, and had too much hysteresis, which caused it to skip over VHF signals and stop only on UHF signals. This is probably caused by misalignment, rather than a design flaw, as four friends with 200XLTs had no such problems. Grove Enterprises graciously swapped the defective radio for another brand new 200XLT, and the exchange took about a week using UPS shipping.

The squelch action on the new 200XLT is quite good, much better than on the 760XLT and PRO-2004, both of which have too much hysteresis. UHF sensitivity is excellent, and while I don't often listen to aircraft, the sensitivity in the AM aircraft band appears adequate.

Using an outside antenna, the 200XLT is sometimes bothered by the obnoxious 300 watt paging transmitter nearby,

but so was my 800XLT on an indoor whip. Expecting a portable scanner to behave well on an outside antenna may be asking too much.

Most every superheterodyne receiver has birdies, those places on the dial where the receiver "hears itself." The 200XLT owner's guide does not list birdies, but they're there. Many of the birdies are weak, and disappear when the heliflex antenna is replaced with an outdoor antenna.

The first IF is 10.85 MHz, and the second IF is 450 KHz. Images of stations in the UHF range were noted 21.7 MHz higher than their assigned frequencies. The cellular telephone bands are disabled, but strong cellular phone signals are heard 21.7 MHz higher than their assigned frequencies anyway. Some people might consider this an advantage! Besides, there's not much activity above 892 MHz to listen to yet.

The 200XLT hears TV stations where they shouldn't be - in the 850 and 890 MHz bands - thanks to multiple injection into the mixer stage, no doubt.

Scanners sold by Grove Enterprises are supplied with instructions detailing how to restore cellular phone band coverage. The instructions for the 200XLT just involve crushing one resistor, but I haven't tried this.

Both my 200XLTs were a few kHz off frequency in the 800 MHz band. Weak signals were slightly distorted, and using the search feature revealed an asymmetry - I could hear the station +12.5 kHz stronger than -12.5 kHz away from what was supposed to be the center frequency.

Having no schematic, I deduced that the orange non-ceramic trimmer capacitor on the PLL board (the board with the horizontal crystal on top of the IC) determined the PLL reference frequency. I programmed a frequency near 850 MHz on the 200XLT, then adjusted the trimmer capacitor while listening to the local oscillator signal 10.85 MHz lower on my ICOM R-7000. The discriminator meter on the R-7000 makes that radio a great test instrument, but be sure your R-7000 is properly aligned before using it to align other radios!

What You Get

Like the 100XLT, the 200XLT comes with a leather-like case, but it's gray instead of black. The case has openings in all the right places, so one can charge the battery without removing the radio from the case. There is a belt loop sewn on the back, but a user must unfasten his/her belt to thread it through the loop, a big inconvenience. The scanner cannot be left standing up while in the case, because the case bottom is rounded.

There is no belt clip on the 200XLT. To carry the scanner on my belt, I use a yuppie-ish Bianchi, hand-tooled leather case, made for the old Kenwood TR2400. My wife bought the used case at a hamfest for \$1.50.

The 200XLT also comes with an AC wall adapter, an earphone, and a helical antenna blessed with a BNC connector.

UNIDEN scanners no longer come with an owner's manual, but with a difficult to use fold out sheet instead. The instructions aren't great, but will tell you most of what you need to know. Of course, you don't get a schematic, but you can order it.<sup>2</sup>

#### Summing Up

The UNIDEN 200XLT works well. It scans fast, sounds good, and excels in the amount and organization of its memory channels. The 800 MHz coverage, multiple priority, frequency finding, and slide-on battery pack features make it the "Lincoln Town Car" of portable scanners.

So far, the 200XLT is the best handheld scanner I've ever used. Now I'm waiting for Radio Shack to shrink the PRO-2004, so we can enjoy continuous frequency coverage in a portable scanner!

-----

1. See "Uniden/Bearcat 100XLT Scanner Review," by Bob Parnass, AJ9S, in The Radio Enthusiast, March 1988.
2. UNIDEN, Parts Department, P.O. Box 50822, Indianapolis, IN 46250.

--



=====  
Bob Parnass, AJ9S - AT&T Bell Laboratories - att!ihuxz!parnass (708)979-5414

-----

End of INFO-HAMS Digest V89 Issue #1046  
\*\*\*\*\*